

**Translation**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 41P04507	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP00/09841	International filing date ( <i>day/month/year</i> ) 07 October 2000 (07.10.00)	Priority date ( <i>day/month/year</i> )
International Patent Classification (IPC) or national classification and IPC G02B 27/01		
Applicant PHYSOPTICS OPTO-ELECTRONIC GMBH		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>8</u> sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>3</u> sheets.</p>
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input checked="" type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>

Date of submission of the demand 24 April 2002 (24.04.02)	Date of completion of this report 10 January 2003 (10.01.2003)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP00/09841

## I. Basis of the report

1. This report has been drawn on the basis of (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

- ☐ the international application as originally filed.
- ☒ the description, pages 1-73, as originally filed,  
 pages \_\_\_\_\_, filed with the demand,  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☒ the claims, Nos. \_\_\_\_\_, as originally filed,  
 Nos. \_\_\_\_\_, as amended under Article 19,  
 Nos. \_\_\_\_\_, filed with the demand,  
 Nos. 1-11, filed with the letter of 15 October 2002 (15.10.2002),  
 Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☒ the drawings, sheets/fig 1/18-18/18, as originally filed,  
 sheets/fig \_\_\_\_\_, filed with the demand,  
 sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
 sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

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## IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☒ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

See supplemental Box.

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 2-11.

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: BOX IV.3**Lack of unity of invention**

1. The application lacks the unity of invention required by PCT Rule 13.

1.1 Claim 1 is directed to an information system comprising

- ❖ a signal acquisition unit;
- ❖ an information processing device; and
- ❖ an output device with a projection device.

1.2 A system of this type is known from document DE-A-196 31 414 (D1; see Figure 3 and associated description).

Beyond the above-mentioned features, Claim 1 defines four alternative signal acquisition units. The first two alternative units address the problem of acquiring signals from the observed image and define as solution the recording of the cornea reflex image or of the latent image on the retina (see the application, page 5, last incomplete paragraph). The last two alternative units address the problem of detecting eyeball position and specify as solution the detection of said position using ultra-sound or by recording the blood vessels in the retina (see page 11, last incomplete paragraph).

The problems and the features of the solutions in the two groups identified above are different, and

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: **BOX IV.3**

for this reason Claim 1 does not satisfy the requirement for unity of invention.

- 1.3 Claims 2 also proceeds from an information system according to document D1.

As further feature, Claim 2 specifies the acquisition of at least two types of signals reflected or irradiated by the eyes. Claim 2 entirely fails to define the possible types of signals.

Proceeding from the general character of the further feature, the claim appears to address the problem of improving signal acquisition in the information system.

The problem and the solution proposed in Claim 2 differ from those in Claim 1, whatever the alternative taken into account. Claims 1 and 2 therefore also fail to meet the requirement for unity of invention.

2. Since only one fee was paid and since it was not possible to recognise from the proceedings what invention the applicant wished to be examined, the discussion of the application under PCT Article 33 is based on Claim 2.

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## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims		YES
	Claims	2	NO
Inventive step (IS)	Claims		YES
	Claims	3 - 11	NO
Industrial applicability (IA)	Claims	1 - 11	YES
	Claims		NO

### 2. Citations and explanations

1. Claim 2 is not clear (PCT Article 6).

1.1 The reference to the acquisition of two types of signals, in the absence of a definition of the types of signal and of the purpose of such acquisition, is not supported by the description, which discloses the acquisition of two particular types of signals for well defined purposes. Firstly, it is proposed to detect the cornea reflex image or the latent image on the retina, in addition to the retina reflex image, and secondly it is proposed to detect the momentary eyeball position, in addition to the acquisition of the retina reflex image.

This inconsistency between the details indicated in the description and the general definition in the claim makes the actual scope of Claim 2 unclear.

2. Claim 2 defines the information system in such a vague manner that the wording of the claim also includes the prior art. The information system therefore cannot be considered novel (PCT Article 33).

- 2.1 Document D1 discloses an information system (see Figure 3 and associated description) comprising
- ❖ a signal acquisition device that acquires signals reflected back by the retina of an eye (see Figure 3: receiving unit and optical beam path from the retina to the receiving unit);
  - ❖ an information processing device (see Claim 22: information is generated in the computer);
  - ❖ an output device which provides information in co-operation with the information processing device and depending on the acquired signals (see Claim 22: generated information is synchronised in space and time with the retina image);
  - ❖ the output device comprising a scanning projection device (see Figure 3: laser projection unit; scanner VSS and HSS) which projects at least some of the information onto the retina (see the beam path in Figure 3); and
  - ❖ the signal acquisition unit acquiring at least two types of signals reflected by the eye (see Figure 3: separate acquisition of signals in the red, green and blue wavelength ranges using sensors PMR, PMG and PMB).

NB: Signals in the red, green and blue wavelength ranges can be easily construed as different types of signal.

The information system as per Claim 2 is therefore not novel because each feature of Claim 2 has its correspondence in document D1.

3. The dependent claims do not contain any features which, in combination with the features of Claim 2,

meet the PCT requirements for novelty and inventive step.

The reasons for this opinion are that the dependent claims mainly describe features of the information device, of the output device and of the projection device. These features are at least obvious, when not anticipated by document D1.

4. A substantial part of the application concerns signal acquisition, the first signal being a retina reflex image and the second signal a cornea reflex image or a latent image on the retina (see also Claims 1 and 2). If Claim 2 were harmonised with the description in accordance with this meaning, it would probably meet the requirements of PCT Article 33.

Another part of the application concerns signal acquisition, the first signal being a retina reflex image and the second signal an image of the retina in the IR range or acoustic signals reflected by the eye. If Claim 2 were harmonised with the description in accordance with this meaning, it would probably also meet the requirements of PCT Article 33.

However, these two hypothetical claims would lack unity of invention, for the reasons indicated in Box IV.